

**ROCKY FLATS PLANT  
EM RADIOLOGICAL GUIDELINES**

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**3-21000-OPS-EMRG**  
**Table of Contents, Rev 6**  
**1 of 2**  
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**Environmental Management**

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•EMRG 1.0	4-M83-ER-OPS-EMRG-1.0 - Environmental Management Radiological Guidelines for Organization and Responsibilities	1	02/09/95
EMRG 1.1	Gama Radiation Surveys	0	12/06/91
EMRG 1.2	Beta Radiation Surveys	0	12/06/91
EMRG 1.3	Posting of Radiation Protection Requirements	0	12/06/91
EMRG 2.1	Personnel Contamination Monitoring	0	12/06/91
EMRG 2.2	Possible Inhalation Exposure	0	12/06/91
EMRG 2.3	Wounds and Skin Contamination	0	12/06/91
EMRG 3.1	Performance of Surface Contamination Surveys	0	12/06/91
EMRG 3.02	4-B96-ER-OPS-EMRG-03.02 - Survey Requirements for Conditional and Unrestricted Use	0*	03/30/94
* This document is a complete revision of document 3-21000-OPS-EMRG 3.2,R0.			
EMRG 3.5	Handling of Contaminated Dosimetry/Security Badges	0	12/06/91
EMRG 6.1	Performance Test and Operational Checks for Ludlum Model 12-A, Model 12, and Model 31 Survey Instruments	0	12/06/91
EMRG 6.3	Performance Checking and Operation of the Eberline SAC-4 Alpha-Scintillation Smear Counting Instrumentation	0	12/06/91
EMRG 6.4	Performance Testing and Operation of the Eberline BC-4 Beta Smear Counting Instrumentation	0	12/06/91
EMRG 6.5	Use of the Bicron Frisk-Tech with the A-100 and B-50 Detectors	0	12/06/91

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ROCKY FLATS PLANT  
EM RADIOLOGICAL GUIDELINES

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EMRG 6.6	Use of the Bicron Fidler (Field Instrument for the Detection of Low-Energy Radiation)	0	12/06/91
94-DMR-ERM-0012	Modification to Reflect Actual Field Work	0	01/25/94
EMRG 9.1	Respiratory Protection Requirements and Posting	0	12/06/91
EMRG 10.1	Radiological Deficiency Reporting Program	0	12/06/91

# Rocky Flats Environmental Technology Site

## 4-M83-ER-OPS-EMRG-1.0

REVISION 1

### ENVIRONMENTAL MANAGEMENT RADIOLOGICAL GUIDELINES FOR ORGANIZATION AND RESPONSIBILITIES

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DOE RFFO/ER Concurrence on file: ☐ Yes ☐ No ☒ N/AEnvironmental Protection Agency Approval Received: ☐ Yes ☐ No ☒ N/AResponsible Organization: Environmental Restoration Program Division

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CONCURRENCE BY THE FOLLOWING DISCIPLINES WILL BE DOCUMENTED IN THE PROCEDURE HISTORY FILE:

Data Management & Reporting Services  
Environmental Operations Management  
Radiological Health and Engineering  
Industrial Hygiene

### USE CATEGORY 4

ORC review not required

The following have been incorporated in this revision:  
94-DMR-001435

This procedure supersedes procedure 3-21000-OPS-EMRG-1.0, Revision 0.

Periodic review frequency: 3 years from the effective date

ENVIRONMENTAL MANAGEMENT RADIOLOGICAL  
GUIDELINES FOR ORGANIZATION  
AND RESPONSIBILITIES

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## 1. PURPOSE

This procedure establishes the functional organization of the Environmental Restoration Program Division site-specific projects and defines responsibilities for implementing consistent radiological guidance during environmental remediation activities.

This procedure implements the requirements of the following documents:

- Rocky Flats Plant Environmental Restoration Site-Wide Quality Assurance (QA) Project Plan
- DOE Order 5400.5, Radiation Protection of the Public and the Environment
- DOE Order 5480.10, Contractor Industrial Hygiene Program
- DOE Order 5480.11, Radiation Protection for Occupational Workers
- DOE / EH-0256T, Radiological Control Manual
- 10 CFR 835, Occupational Radiation Protection

## 2. SCOPE

This procedure applies to Rocky Flats Environmental Technology Site (Rocky Flats) subcontractors involved in the preparation, administration, execution, and modification of radiological guidance.

This procedure addresses the following topics:

- Organization Establishment and Responsibilities
- Radiological Guidance.

This revision is a total rewrite and revision bars are omitted.

This revision supersedes 3-21000-OPS-EMRG-1.0

## 3. RESPONSIBILITIES

### 3.1 Environmental Restoration Health and Safety Officer

Ensures radiological compliance with project-specific documents and field activities.

Implements and manages the Subcontractor Health and Safety Specialist (HSS) Program.

Ensures Contract Technical Representative budget available for Subcontractor HSS Program support.

Ensures that formal training programs provide continuing training to subcontractor employees who perform the duties of Subcontractor HSS.

**3.2      Environmental Restoration Radiological Engineer (ERRE)**

Assists in the development of Environmental Management Radiological Guidelines.

Establishes radiological protection qualifications for the Subcontractor HSS.

Provides technical guidance for subcontractor employee training programs designed for the purpose of Subcontractor HSS training.

Oversees the Radiation Work Permit program administration.

Oversees the Radiological Deficiency Report program administration.

Concurs and approves posting and work control requirements for areas controlled for radiological reasons.

Evaluates possible inhalation exposures and wound and skin contamination incidents.

Performs dose reconstruction for personnel whose dosimeters have been contaminated or deemed unreadable.

Provides guidance on survey techniques and investigates unanticipated survey results.

Ensures that Readiness Assessments include applicable project-specific items related to radiological protection programs.

Participates in Oral Review Board of subcontractor HSS candidates.

**3.3      Environmental Restoration Subcontractor Health and Safety Specialist (HSS)**

Post required signs for site access control.

Controls access and advises personnel of radiological, industrial hygiene, and safety precautions.

Controls posting and work control requirements for controlled areas.

Conducts radiological surveys.

Completes performance and operational checks required for monitoring instruments.

Conducts chemical and physical exposure monitoring.

**3.3      Environmental Restoration Subcontractor HSS (continued)**

Verifies performance testing of Rocky Flats and subcontractor-owned instruments in accordance with the manufacturer's recommendations.

Maintains an Instrumentation Field Log Book that contains documentation for the specific equipment used at the work site.

Reports all radiological concerns or deficiencies to the ERRE.

Obtains approval from Oral Review Board prior to performing Subcontractor HSS duties.

**3.4      Environmental Restoration Subcontractor Project Manager**

Nominates Site Safety Officers (SSOs) and Subcontractor HSSs for the ERRE's approval to ensure that all qualifications for the positions have been fulfilled.

Supervises Subcontractor HSSs in the performance of their responsibilities.

Ensures compliance with the Health and Safety Practices Manual.

**3.5      Environmental Restoration Subcontractor Site Safety Officer (SSO)**

Supervises Subcontractor HSSs in the performance of their responsibilities.

Reviews, approves and maintains completed survey reports and forms.

Notifies the ERRE and the Industrial Hygienist of areas that require access controls or action level.



#### 4. TRAINING

##### Environmental Restoration Program Division Project Manager

- [1] Ensure that subcontractor HSSs are trained and qualified to perform the duties, tasks, and responsibilities described in this procedure.

Minimum qualifications for personnel selected to perform Subcontractor HSS-functions are:

- Education: High school diploma
- Experience: Minimum of 2 years of "hands-on" experience in Radiological Protection and Worker Health and Safety Programs. This includes the identification, evaluation, and control of occupational health and safety hazards.
- Training: Meet minimum requirements of:
  - DOE Order 5480.10
  - DOE Order 5480.11
  - DOE/EH-0256T Radiological Control Manual

- [2] Ensure that all core and Environmental Restoration Program Division specific training has been completed and documented, and that copies of all documentation have been forwarded to the Environmental Restoration Program Division training files.

**5. INSTRUCTIONS**

**5.1 Organizational Establishment**

**ERRE**

- [1] Prepare Environmental Management Radiological Guidelines (EMRGs) that address the following subjects:
- Survey Methods
  - Documentation
  - Frequencies
  - Locations

**Environmental Restoration Health And Safety Officer**

- [2] Ensure that all radiological aspects of project-specific documents meet the criteria established in Rocky Flats Plant Environmental Management Site-Wide QA Project Plan.

**Subcontractor Project Manager**

- [3] Nominate SSOs and Subcontractor HSSs for ERRE and Industrial Hygiene approval.
- [4] Ensure that adequate funding is provided to the Subcontractor for the Subcontractor HSS Program.

**ERSHO**

- [5] Implement and manage the Contractor Specific Subcontractor Health and Safety Specialist Program.
- [6] Contact the Contract Technical Representative for budgeting of Subcontractor HSS Program support when appropriate.

**ERRE and Industrial Hygiene**

- [7] Review the credentials of prospective Subcontractor HSSs.

**SSO**

- [8] Ensure that updated copies of the documents referenced by the EMRGs are available to subcontractor employees.

**SSO and Subcontractor Project Manager**

- [9] Supervise Subcontractor HSSs in the performance of their responsibilities.

## 5.2 **Radiological Guidance**

### 5.2.1 **General Radiological Activities**

#### **Subcontractor Project Manger**

- [1] Ensure compliance with Health and Safety Practices Manual, as appropriate, for the duration of the project.

#### **ERRE**

- [2] Oversee Radiation Work Permit (RWP) program administration in accordance with HSP 6.07, Radiation Work Permit.
- [3] Oversee Radiological Deficiency Report (RDR) program administration in accordance with 3-21000-OPS-EMRG-10.1, Radiological Deficiency Reporting Program.
- [4] Determine the appropriate posting and control of radiologically contaminated sites in accordance with 3-P09-ER-OPS-EMRG-1.3, Posting of Radiological Protection Requirements.

#### **HSS**

- [5] Determine, in accordance with the following documents, the appropriate release of areas previously posted as radiological or contaminated areas:
  - Health and Safety Practices Manual
  - Radiological Operating Instructions
  - 3-21000-OPS-EMRG, Environmental Management Radiological Guidelines
- [6] Specify work controls for radiologically controlled areas, or review and approve work controls prepared by subcontractors in accordance with the following documents:
  - Health and Safety Practices Manual
  - Radiological Operating Instructions
  - 3-21000-OPS-EMRG, Environmental Management Radiological Guidelines

#### **ERRE**

- [7] Review and concur with removal of permanent signs.

#### **SSO**

- [8] Implement the applicable site-specific Health and Safety Plan and verify compliance with all applicable health and safety requirements.
- [9] Advise Subcontractor HSSs and subcontractor employees of the radiological hazards, both expected and suspected, by posting and controlling radiological areas in accordance with 3-21000-OPS-EMRG.

### 5.2.1 General Radiological Activities (continued)

#### HSS

- [10] Post signs required for access control in accordance with 3-P09-ER-OPS-EMRG-1.3.
- [11] Control access and advise all personnel when radiological precautions are required.
- [12] Report all radiological concerns or deficiencies to the ERRE.

#### ERRE

- [13] Provide support for the evaluation and control of work requiring respiratory protection.
- [14] Establish survey and sampling strategies for property that cannot be surveyed in accordance with the standard techniques outlined in 3-21000-OPS-EMRG.
- [15] Ensure that property to be released for unrestricted use does not exceed the limits specified in 1-16100-HSP-18.10, Release of Property for Conditional and Unrestricted Use, and 4-B96-ER-OPS-EMRG-03.02, Survey Requirements for Conditional and Unrestricted Use.

#### HSS

- [16] Conduct chemical and physical exposure monitoring.

#### ERRE

- [17] Provide radiological documentation such as property releases and RWPs.
- [18] Evaluate possible inhalation exposures and decide on appropriate actions in accordance with 3-P10-ER-OPS-EMRG-2.2, Possible Inhalation Exposure.
- [19] Evaluate possible wound and skin contamination incidents in accordance with 3-21000-OPS-EMRG-2.3, Wounds and Skin Contamination.
- [20] Perform dose reconstruction, in conjunction with External Dosimetry, for personnel whose dosimeters have been contaminated or are deemed unreadable.

### 5.2.2 Radiological Surveys

#### HSS

- [1] Conduct surveys and document the results as required by the following documents:
  - 3-21000-OPS-EMRG
  - The project specific applicable site-specific Health and Safety Plan
  - 5-21000-OPS-FO, Field Operations

**5.2.2 Radiological Surveys (continued)**

**ERRE**

- [2] Provide guidance on the performance of the procedures and techniques utilized in field operations for surface contamination surveys.

**HSS**

- [3] IF survey results indicate that radiation levels:
- Exceed 5 mrem/h.
  - Require access controls not already established.
  - Exceed an established action level.
- THEN notify the SSO and the ERRE .
- [4] Forward completed survey reports and documentation to the SSO.

**SSO**

- [5] Review and approve completed survey reports and forms, ensuring the following:
- The correct report or form is completed
  - The entries are correct
  - The required signatures are affixed to the report
- [6] IF an unsatisfactory radiological report or other documentation of an unsatisfactory condition is received,  
THEN notify the appropriate individual(s) that the condition requires correction.
- [7] IF radiation levels exceed 5 mrem/h,  
THEN notify the ERRE that access control is necessary.
- [8] IF contaminant radiation levels require access controls not already established or exceed an established action level,  
THEN notify the ERRE.
- [9] Forward approved survey reports and documentation to the project file.

**ERRE**

- [10] Investigate unanticipated survey results in accordance with the applicable Radiological Operating Instructions and 3-21000-OPS-EMRG.

Unanticipated survey results include such things as a lack of radioactivity when radioactivity is known to be present and radiation levels exceeding anticipated levels.

- [11] Periodically review and audit selected radiation survey reports.

### 5.2.3 Radiological Instrumentation

#### HSS

- [1] Verify that performance testing of Rocky Flats and subcontractor-owned instruments has been conducted in accordance with the manufacturer's recommendations.
- [2] Document the specific equipment used at the work site in the Instrumentation Field Log Book.

This documentation might include such information as manufacturer, model number, serial number, and date last calibrated.

- [3] Ensure that the test results are recorded daily in a calibration log specific to each instrument.
- [4] Complete performance and operational checks required for monitoring instruments, and make entries in the Instrumentation Field Log Book.

## 6. RECORDS

Management of all records is consistent with 1-77000-RM-001, Records Management Guidance for Records Sources.

#### Environmental Restoration Program Division Records Source

- [1] Ensure that the original and one copy of the following quality-related records, as appropriate, are transmitted to the Environmental Restoration Program Division Project File Center in accordance with 2-G18-ER-ADM-17.01, Records Capture and Transmittal:
  - Performance-based training documentation
  - Site Specific Health and Safety Plan
  - Property releases
  - Survey reports
  - Instrumentation Field Log
  - Calibration Log

Submission of record copies to the Environmental Restoration Program Division Project File Center will satisfy Administrative Record requirements.

There are no nonquality records generated by this procedure.

## 7. REFERENCES

DOE / EH-0256T, Radiological Control Manual

DOE Order 5480.10, Contractor Industrial Hygiene Program

7. REFERENCES (continued)

DOE Order 5480.11, Radiation Protection for Occupational Workers

Rocky Flats Plant Environmental Restoration Site-Wide QA Project Plan

Health and Safety Practices Manual

HSP 6.07, Radiation Work Permit.

Institute of Nuclear Power Operators (INPO) Guideline 87-008

1-16100-HSP-18.10, Release of Property for Conditional and Unrestricted Use

2-G18-ER-ADM-17.01, Records Capture and Transmittal

3-P09-ER-OPS-EMRG-1.3, Posting of Radiological Protection Requirements

3-P10-ER-OPS-EMRG-2.2, Possible Inhalation Exposure

3-21000-OPS-EMRG, Environmental Management Radiological Guidelines

3-21000-OPS-EMRG-2.3, Wounds and Skin Contamination

3-21000-OPS-EMRG-10.1, Radiological Deficiency Reporting Program

4-B96-ER-OPS-EMRG-03.02, Survey Requirements for Conditional and Unrestricted Use

5-21000-OPS-FO, Field Operations

10 CFR 835, Occupational Radiation Protection